



## 2021 Request for Proposals

The California Tomato Research Institute (CTRI), a non-profit crop improvement organization of processing tomato growers, is seeking applied research proposals for 2021 calendar year funding. The CTRI extends an open invitation to submit research proposals for project funding in the below priority topics. **Proposals are due on or before Friday, October 30<sup>th</sup>, 2020.**

### Background:

Our purpose is to identify and fund research focused on enhancing the economic viability of California's processing tomato industry with emphasis on improving production, product quality and environmental stewardship. The Institute Board believes the processing tomato industry will be best served with well-defined, short and intermediate term applied research projects. Proposals reviewing or adapting existing technology from other cropping systems or disciplines and placing them within the context of commercial processing tomato production are also encouraged. Average total funding available has historically been between \$300,000-\$400,000, spread across 15-20 separate projects.

**High priority research areas for the 2021 RFP are included below. Numbered research areas are not prioritized, as many of these areas of inquiry and issue interact. Topics within each numbered research area are prioritized by need and interest.**

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1. **The screening of control agents through applied field trials** for the management of the following prioritized pests and diseases: Fusarium wilt race 3, Resistance Breaking Tomato spotted wilt virus (TSWV-RB), Branched broomrape, Root-knot nematode (RKN), Beet curly top virus (BCTV), Fusarium falciforme, field bindweed, FORL, Southern blight, and Conspere stink bug.
2. **The screening of commercially available cultivars for genetic tolerance/resistance through applied field trials** for the management of the following prioritized pests and diseases: Fusarium falciforme, FORL, and Branched broomrape.
3. **The development of diagnostic tools** which will allow for the rapid and definitive diagnosis of the following prioritized pests and diseases: Branched broomrape, Fusarium wilt race 3, TSWV-RB, Fusarium falciforme, resistance breaking RKN, FORL, and Alfalfa Mosaic Virus. Metrics of success here will be: efficacy, ease of use (i.e. labor cost), proximity to field, speed, and cost.
4. **The development of forecasting tools** which will allow for predictive monitoring and give field-level actionable insights with respect to the following prioritized pests and diseases: BCTV, resistance breaking RKN, and Southern blight.
5. **Automation/mechanization** of the following prioritized tasks:
  - a. **Transplanting** – in-field cost benefit analyses of currently available technologies, including but not limited to: AgriPlanter, Ferrari, TTS B.V., PlantTape.
  - b. **Cultivation** – in-field cost benefit analyses of currently available technologies, including but not limited to: finger weeders, Garford, Robovator, and FarmWise.
  - c. **Granular yield and plant stress monitoring** via satellite imagery, ground rig, and/or drone leading towards greater uptake of precision management tools.
  - d. **Seed testing** – the development and comparison of non-destructive and high throughput testing of seed for: viability, robustness, pests and diseases of commercial and trade importance, etc.
6. **The development of sanitation best management practices** that can be widely adopted and will minimize the transmission of soil borne pathogens and high priority weed species between fields via equipment. Metrics of success here will be: efficacy, labor costs, and chemistry costs.

**7. Recognizing we are not going to completely and for all time “technology” our way out of the fundamental constraint of healthy soils - Agronomic management under the conditions of long term SSDI:**

- a. Continued optimization of **late season deficit irrigation guidelines** that maximize yield AND Brix. Add stress induced disease pressure into the decision matrix.
- b. **Soil type and rotation:** impact on inoculum levels of pests and diseases of concern, over time.
- c. **Fertility optimization per invested dollar** – a path towards greater precision management.
- d. **Soil microbial communities:** Does the natural in-field variance of these communities account for actual differences in yield and quality? If so, what is the best method of testing for the populations we want, what is the most effective way of intentionally cultivating their populations in the soil (questions around compost and cover cropping), and are any of the commercially available products with relevant label claims doing anything measurable?
- e. **Physiological responses to heat extremes and possible management response** – the likelihood of increased stochasticity, particularly in night time highs, opens up the need to be more informed around plant response to variable irrigation strategies during these extreme events.

**8. Genetic discovery:** the discovery and characterization of particular genes which confer resistance to known pests and diseases (or deter them in some other way) and increase resilience to heat, water and salt stress.

**Selection Process:**

Proposals are judged on individual merit and interest from within the grower membership. Expect that your proposal will be subjected to review by subject matter experts, in addition to the CTRI Board. Funding is approved annually. Cost sharing, in addition to leveraging CTRI funding towards larger grants, is highly encouraged.

After an initial review process, the PIs of those proposals moving forward will be notified with additional instructions for inclusion in the Annual Research Meeting, to take place on Thursday, December 3<sup>rd</sup>. Those with proposals moving forward should expect to provide a short recorded presentation by November 23<sup>rd</sup> (which will be sent to the Board for pre-review) and to be available during pre-planned time slots on the day of the meeting for questions from the Board. These presentations are expected to include key takeaways from 2020 research (if applicable) and your proposal for any ongoing or new research for 2021. Researchers will be notified within a week of the meeting on Board decisions.

**Submit proposals to zach@tomatonet.org no later than Friday, October 30<sup>th</sup>, 2020.** I will confirm receipt of your proposal. A format sheet is attached. If you have any questions regarding prioritization, formatting, or otherwise throughout this process do not hesitate to reach out directly.

**2020 Project Completion:**

For those researchers with projects in 2020, current funding cycle final project reports are due on or before Thursday, December 31<sup>st</sup>, 2020. Because these reports will not be seen by the Board prior to the Annual Research Meeting - if you will be proposing a 2021 project (either a continuation of your current work or a different project) and I do not hear from you about submitting an update to your September Progress Report AND I think the Board would benefit from one prior to hearing from you during the Annual Research Meeting I will reach out to you.

Beginning in 1968 the CTRI has been in the active practice of building durable coalitions around the questions whose answers drive the long term success of the California processing tomato industry. **Thank you for your contribution(s) towards this goal.**

Sincerely,



Zach Bagley



(Submit to zach@tomatonet.org in .doc, .docx or .pdf format on or before October 30<sup>th</sup>, 2020)

## 2021 Research Project Proposal Format

Proposals are limited to eight pages maximum with standard (1" sides and ½" top and bottom) margins. This maximum includes a title page, budget page, and references. This maximum does not include brief resume(s). Do not number pages as these will be compiled into a larger document. All completed proposals must be submitted via email to Zach Bagley at zach@tomatonet.org in .pdf, .doc or .docx format by October 30<sup>th</sup>, 2020. If the proposals are not in the below format they will be sent back for edit.

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### Title Page:

- Project title: keep it concise;
- Type of proposal: new or continuing;
- Amount of funding requested: note total \$ amount, full budget will come later;
- Year of project: 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, etc.;
- Principle Investigator, affiliation and contact information for official correspondence;
- Co-PI(s) and affiliation(s);
- Cooperator(s);
- Executive Summary: In 400 words or less provide context for the relevance and significance of your proposed research, and potential outcomes therein. **Remembering that the most important audience for this summary is the Institute Board of Directors, you are encouraged to describe your proposed project – it's methods, expected results, and potential benefits – in non-technical terms.**

### Body of Proposal:

- **Introduction and Justification (two page maximum):** Provide rationale for need. Summarize previous research done in this area of thought and include major reference sources. If this is the 2<sup>nd</sup> or 3<sup>rd</sup> year of a multi-year project explain how the proposed work will build on prior year's accomplishments.
- **Main Goal and Objectives:** Statement of major goal and specific objectives in clear and concise terms, logically or chronologically organized. A list of deliverable and measurable results per objective (including benchmarks of anticipated progress) is not only helpful but compulsory in describing benefits of the proposed project.
- **Methods:** Describe the methodology and procedures to be used and the types and timing of expected results; also note what could go wrong. If, from the perspective of the end reader, it would make sense to include the methods and procedures planned for a particular objective under each separate objective in the "Main Goals and Objectives" section and not have a separate section for methods, by all means, do that.
- **Expected Outcomes and Benefits:** Describe anticipated benefits to the processing tomato industry, specifically, as a result of the proposed project. The inclusion of cost differential from industry standard practice is expected and will strengthen your case.

**References:** include citations for those sources (expectation is 10 or less) which have been utilized for the above sections. Citation format is your choice.

**Budget:** Budgets must be formatted based on the outline below. Only include budget details for the year the proposal is for – if the project is expected to be multi-year detail on subsequent years is not necessary but expected total for those subsequent years is. A brief (1-3 paragraph) budget explanation is expected. Note that the CTRI does not allow for indirect or overhead costs to be charged against grants.

**Budget Detail (Use as many rows as necessary):**

	Responsibility/Purpose	% time on project	Requested Funds		
			Year 1	Year 2*	Year 3*
Personnel (salary)				For approximate expectation only	For approximate expectation only
Personnel (fringe)					
Supplies and Equipment					
Use of Fixed Equipment					
Travel					
Other (specify)					
<b>TOTAL Costs</b>					

\*Year-over-year continuation of projects is based on CTRI Board approval.

**Other Support:** Have you or are you planning on leveraging our support for further research dollars in this area? Do you anticipate any cost sharing or in-kind support? If so, great. Please let us know about this, by amount and source. We use this information to help communicate to our stakeholders the value driven into the industry by the researchers we work with AND the significance of this research, generally.

**Qualifications:** A brief resume (less than 2 pgs., listing no more than 10 relevant publications) for each PI.

**Approval Signatures:** Those which satisfy department and/or division requirements. CTRI only requires a PI signature.

**Expectations around reporting:**

- A short (1-3 page) mid-year progress report will be due in August. This report will be distributed to the CTRI Board and will be received before the 2<sup>nd</sup> half of funding is distributed.
- Although final reports will not be due until year end, if researchers will be requesting related funding for 2022 there is an expectation that up-to-date 2021 progress be included in the 2022 proposal and that this progress update be worked into the Annual Research Meeting presentation.
- A final report (in both summary and full versions) will be due at year end. Distribution of these reports will be to the CTRI Board and CTRI Grower Members. These reports will also be posted to the CTRI website, which is available to the public.
- Outside of these expectations, as many funded projects will naturally have an extension component, it is anticipated that results will be communicated and shared throughout and after the project at field days and research meetings. **It is the expectation of the CTRI that, particularly at meetings where processing tomato growers are present, these presentations include conspicuous reference to CTRI funding and support.** It is also anticipated that, up to the discretion of the researcher, this work be presented at scientific meetings and published in peer reviewed journals.

**2021 Cycle Timeline:**

- RFP Release: September 19<sup>th</sup>, 2020;
- Deadline for submission of proposals: October 30<sup>th</sup>, 2020;
- 2020-2021 Annual Research Meeting: December 3<sup>rd</sup>, 2020;
- 2021 Funding Decision Notification: December 11<sup>th</sup>, 2020;
- 2021 Funded Project Contracts sent to Grants and Contracts offices: December 11<sup>th</sup>, 2020;
- 2020 Final Project Report Deadline: December 31<sup>st</sup>, 2020;
- 2021 Funded Project Progress Reports due: August 31<sup>st</sup>, 2021;
- 2021 Funded Project Final Reports due: December 31<sup>st</sup>, 2021